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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------|------------------|
| 10/706,480 | 10/27/2003 | Dwight A. Burford | 038190/268379 | 8066 |
| 826 | 7590 | 12/21/2005 | | EXAMINER |
| ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000 | | | EDMONDSON, LYNNE RENEE | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1725 | |

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|------------------------------|------------------------|---------------------|--|
| | 10/706,480 | BURFORD ET AL. | |
| Examiner | Art Unit | | |
| Lynne Edmondson | 1725 | | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 October 2005.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,3-6,8-11,13-16 and 18-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,3-6,8-11,13-16 and 18-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 07 April 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, 3, 6, 8, 11, 13, 16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kinton et al. (USPN 6050475).

Kinton teaches a friction stir welding method and apparatus comprising a controller for controlling the insertion depth (plunge) of the tool such that the spindle motor operates within a predetermined range of torque and current. A contact sensor is also employed to detect distance and depth (figures 9, 10, col 8 line 6 – col 10 line 8).

3. Claims 1, 3, 5, 6, 8, 10, 11, 13, 15, 16, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell et al. (USPN 6199745 B1).

Campbell teaches a friction stir welding method and apparatus comprising a controller for controlling the rotation speed and insertion depth (plunge) of the tool such

that the spindle motor operates within a predetermined range of torque (col 3 line 48 – col 4 line 14).

4. Claims 1, 3-6, 8-11, 13-16 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Koga et al. (US 2005/0001010 A1).

Koga teaches a friction stir welding method and apparatus comprising a controller for the joining speed, rotational speed and insertion depth (plunge) of the tool such that the spindle motor operates within a predetermined range of torque (paragraphs 71-73).

5. Claims 1, 3, 6, 8, 11, 13, 16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshinaga (USPN 6708865).

Yoshinaga teaches a friction stir welding method and apparatus (col 1 lines 5-11) comprising a controller for controlling the insertion depth (plunge) of the tool such that the spindle motor operates within a predetermined range of torque and current (col 4 lines 15-65). A contact sensor is also employed to detect distance and depth (col 4 lines 57-65 and col 5 lines 38-62). Cutting and bonding tools are interchangeable (col 5 lines 17-35).

6. Claims 1, 3, 6, 8, 11, 13, 16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Okamoto et al. (US 2004/0173663 A1).

Okamoto teaches a friction stir welding method and apparatus comprising a controller for controlling the insertion depth (plunge) of the tool such that the spindle motor operates within a predetermined range of torque and current (paragraphs 12-20 and 36-42).

Response to Arguments

7. Regarding applicant's argument that Campbell, Koga, Yoshinaga and Okamoto references teach controlling the rotational torque of the spindle actuator rather than controlling the plunge axis torque of the plunge actuator, it is noted that the plunge axis and rotational axis coincide. The spindle actuator serves the same function as the plunge actuator which controls the depth of penetration.
8. Therefore the 102 rejection of claims 1, 3, 5, 6, 8, 10, 11, 13, 15, 16, 18 and 20 as anticipated by Campbell stands.
9. Therefore the 102 rejection of claims 1, 3-6, 8-11, 13-16 and 18-20 as anticipated by Koga stands.
10. Therefore the 102 rejection of claims 1, 3, 6, 8, 11, 13, 16 and 18 as anticipated by Yoshinaga stands.
11. Therefore the 102 rejection of claims 1, 3, 6, 8, 11, 13, 16 and 18 as anticipated by Okamoto stands.

Conclusion

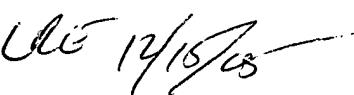
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ding et al. (USPN 6497355 B1).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson
Primary Examiner
Art Unit 1725



LRE